CE1313 Engineering Measurements

Fall 2023

Professor Raed Aldouri
raeda@utep.edu
(915) 747-8019

Office hours: MW 11:30 – 12:20
Office: Engineering A219

COURSE DESCRIPTION

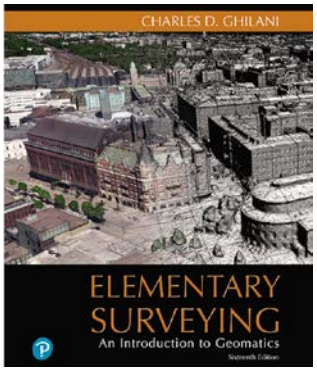
CE1313 is the engineering measurement course dealing with engineering surveying, its theory, computations, equipment, and field work. In any engineering project, be it construction of buildings, highway or developing land, surveying is the first task conducted to determine elevation of the land and generate a detailed topographic map that will be used in planning and design.

COURSE OBJECTIVES OR EXPECTED LEARNING OUTCOMES

At the end of this course, students will be able to:

- Understand the principles, methods, and modern applications of surveying.
- Apply these principles with hands-on exercises.
- Understand the fundamentals of global positioning system (GPS) and GNSS (global Navigation Satellite System)
- Learn Geographic Information System (GIS)
- Develop a knowledge of using both GPS and GIS
- Understand what earth work means.
- Introduce photogrammetry, Lidar, and other new technologies.

REQUIRED MATERIALS



Elementary Surveying: An Introduction to geomatics; by Charles Ghilani, 16th Edition.

ISBN 9780134604657 | ISBN 0134604652

Make sure you get **Pearson registration code** when you buy the book as we will use Pearson Mastering Engineering for all homework and quizzes. You will also need regular access to a computer, stable, consistent internet, Blackboard, and your UTEP email account.

COURSE ASSIGNMENTS AND GRADING

Assignments for this course are assessed according to the following Grading.

Grade Distribution:

A = 100 – 90 B = 89 – 80 C = 79 – 70 D = 69 - 60 F = 59 and Below

Homework & Quizzes	**25 points**
Lab Assignments	**30 points**
Exam I	**15 points**
Exam II	**15 points**
Exam III	**15 points**
Final Exam	**Is optional and will replace one of the exams low grades.**

Assignments and quizzes will be given to monitor students' learning progress. The student should be able to discuss homework assignments. Un-announced quizzes will be given during class. Once a topic is finished, students should be ready for a quiz. You need to have a calculator that meets NCEES requirements.

No Cell Phones usage or other devices are allowed during class or exams unless instructed by me to use it.

Calculators approved by the National Council of Examiners for Engineering and Surveying (NCEES):

Casio:	All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
Hewlett Packard:	The HP 33s and HP 35s models, but no others.
Texas Instruments:	All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

ATTENDANCE POLICY

Attendance is required so you understand the materials and by the completion of the following activities:

- Reading/Viewing all course materials to ensure understanding of assignment requirements.
- Completing all major assignments and Activities (assignments, quizzes, etc.)
- To preserve a student's GPA, he/she WILL be dropped from the course for failure to turn in three or more major assignments.
- Students will receive a **warning if they miss three lectures** and will be **dropped if they miss five lectures.**

LABORATORY GUIDELINES

Field Work:

Fieldwork will be done in groups (each group has about 4 students). Students will form their groups, which remain fixed for the entire semester.

Each group should complete a lab report (see the following guidelines for preparing lab reports). Reports will be included in the group folder.

Groups should be prepared to present the report to the class as requested by the instructor

Lab work will focus on using electronic total station, automatic level, handheld GPS, and ArcGIS software. Some labs may require knowledge of AUTOCAD, or other graphing software.

Lab Reports:

The lab report should be neat, concise, and accurate. It should consist of the following sections:

1. Cover page:

   Report Title; Author's Name and Group Number

   Course Number and Semester

   Date of the Report

2. Objectives and Procedures

   Purpose of the field exercise

   Description of all the steps implemented in the fieldwork.

3. Results and Discussion

   In this section, you present your measured and computed data in drawings, graphs, tables etc., as appropriate. Also, you discuss your results in a concise and clear manner. Drawings and figures should be prepared.

electronically. You are strongly encouraged to use ArcGIS or AutoCAD for drawings and analysis.

Appendix A: Data sheet of measured (raw) data

Appendix B: Data calculations

TECHNOLOGY REQUIREMENTS

Course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have or have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, Adobe, Flash player, Windows Media Player, QuickTime, and Respondus lock down browser. Check that your computer hardware and software are up-to-date and able to access all parts of the course. Pearson Mastering Engineering is used in this course.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the Help Desk as they are trained specifically in assisting with technological needs of students.

Pearson Mastering Engineering

Student Registration Instructions will be posted on Blackboard.

Note: We recommend you always enter your Mastering Engineering course through Blackboard.

Get your computer ready.

For the best experience, check the system requirements for your product at

https://www.pearsonmylabandmastering.com/system-requirements/

Need help?

For help with Mastering Engineering for Blackboard, go to

https://help.pearsoncmg.com/mylabmastering/bbi/student/en/index.html

LATE WORK POLICY

Major Assignments

Homework, Quizzes and Labs
All assignments are due at (11:59PM) on the due date assigned. No late work will be accepted.

DROP POLICY

To drop this class, please contact the Registrar's Office to initiate the drop process. It is the student's responsibility to drop the course. If you cannot complete this course for whatever reason, please contact me. If you do not, you are at risk of receiving an **"F"** for the course.

ACCOMMODATIONS POLICY

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services.

SCHOLASTIC INTEGRITY

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more HOOP: Student Conduct and Discipline.

STUDENT RESOURCES

UTEP provides a variety of student services and support:

UTEP Library: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.

Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.

Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.

History Tutoring Center (HTC): Receive assistance with writing history papers, get help from a tutor and explore other history resources.

Military Student Success Center: UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.

RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

Honor Code

Civil Engineering and Construction Management are licensed professions that are regulated by each state through licensing or engineering practice law. Each state requires engineers to protect the public safety and act in an honest and trustworthy manner. These standards of ethical behavior are also codified in ethics guidelines established by the National Society of Professional Engineers (NSPE), the American Society of Civil Engineers (ASCE), and the Texas Society of Professional Engineers (TSPE).

Department Policy

The Department has established this Honor Code Policy because it has an obligation to the State and the public to prevent students from entering the profession who are not honest and trustworthy in their academic efforts. This Honor Code Policy allows the Department to recommend disciplinary action to the University Office of Student Services and to remove students from the Department who have violated the Honor Code. This Honor Code is consistent with the Student Conduct and Discipline Chapter of the Student Affairs Section of the Handbook of Operating Procedures of the University of Texas at El Paso http://admin.utep.edu/Default.aspx?alias=admin.utep.edu/hoop. The Honor Code applies to graduate and undergraduate students, faculty members, and administrators. The Honor Code is based on these requirements:

- Engineers must possess personal integrity both as students and as professionals. They must ensure safety, health, fairness, and honesty in their undertakings.
- Students in the Department are honorable and trustworthy.
- The students, faculty, and administrators of the Department trust each other to uphold the principles of the Honor Code, and they are jointly responsible for precautions against violations of its policies.
- It is dishonorable for students to receive credit for work that is not the result of their own efforts.

Department students are required to sign an Honor Code Agreement which will be kept on file with the Department. The Honor Code has been established to support and enforce course policies set by instructors. Course instructors have exceptional latitude when preparing the policies for their courses. This can lead to variations between policies of different courses. It is the instructor's responsibility to clearly develop course policies. Students are responsible for understanding the Honor Code and course policies and should consult with the instructor if they are unclear. If a student consults with the instructor and still feels the policies for a course are not clear or fair, the student should notify the Department Chairperson.

Department students enrolled in courses outside of the Department must abide by the policies of the school or college in which the course is offered. Students who are not members of the Department who take a course offered by the Department are bound by the policies of the Honor Code.